a top plate, a ground plate, a dielectric material between the top plate and the ground plane, and a feed pin connected to the top plate somewhere within the top plate's interior area;

a first shorting pin and a second shorting pin, the first and second shorting pins directly connecting to the top plate somewhere within the top plate's interior area and to the ground plane, and the first and second shorting pins located at distances ρ_1 and ρ_2, respectively, from the feed pin to provide a desired impedance of the PIFA at the feed pin.

Claim 2 (Amended) The PIFA of claim 1, wherein the feed pin is connected to a first end of a transmission line, the transmission line being used for fine-tuning of the PIFA.

Claim 3 (Amended) The PIFA of claim 2, wherein a second end of the transmission line is connected to a power amplifier.

Claim 21 (Amended) A planar inverted-F antenna (PIFA) comprising of:

a rectangular top-plate, having a dimension L and a dimension W, a ground plane having dimensions larger than those of the top-plate, and a dielectric material between the top-plate and ground plate;

a feed pin connected to the top-plate somewhere within the top-plate's interior area;

a first shorting pin and a second shorting pin connected between, and to, the top-plate and ground plane, such that the feed pin and two shorting pins form substantially a right angle whose edges are substantially perpendicular and parallel to an edge of the top-plate, and such that each shorting pin is a distance ρ from the feed pin; and

a length of transmission line connected to the end of the feed pin that is not connected to the top-plate.

Claim 22 (Amended) A communication device comprising:

a planar inverted-F antenna (PIFA) having a top plate, a ground plane, and a feed pin connected to the top plate somewhere within the top plate's interior area, a first shorting pin and a second shorting pin, the first and second pins connecting to the top plate somewhere within the top plate's interior area and to the ground plate;

a power amplifier; and

a transmission line connecting the feed pin to the power amplifier.

Claim 23 (Amended) An offset top loaded monopole (TLM) comprising:

a top plate, a ground plate, a dielectric material between the top plate and the ground plane and a feed pin connected to the top plate substantially offset from the centre of the top plate somewhere within the top plate's interior area to provide a desired impedance of the offset TLM at the feed pin.

Claim 38 (Amended) An offset top loaded monopole (TLM) comprising of:

A rectangular top-plate, having a dimension L and a dimension W, a ground plane having dimensions larger than those of the top-plate, and a dielectric material sandwiched between the top-plate and ground plane;

a feed pin connected to the top-plate somewhere within the top-plate's interior area;

a length of transmission line connected to the end of the feed pin that is not connected to the top-plate.

Claim 39 (Amended) A communication device comprising:

an offset top loaded monopole having a top plate, a ground plane, and a feed pin